

REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 1-5, 7, 10, 11, 14-18 and 20 will be pending in the application subsequent to entry of this Amendment.

Taking into account the examiner's comment on page 4, third full paragraph, with regard to claim 18, the subject matter of claim 19 has now been incorporated into claim 18.

New claim 20 has been added directed to a method for preparing paper or paper board. This new claim includes the steps (a)-(d) as in claim 1 but with an additional step of mixing the cellulose fibers with 20-30% of the particulate material based on the total paper or paper product. New claim 20 is the "method" version of product claim 18.

For the record, counsel notes that the Office Action Summary, item 1, refers to a communication filed on January 4, 2010. Actually, the communication was filed on December 29, 2009 as correctly stated on page 2, first full line of the Action.

Claims 1, 4-5, 7, 11, and 14-19 are considered to be obvious in view of Anders, Akitaro *et al.* and Nishino.

Anders discloses that cow and pig hair can be treated in an oxidizing solution comprising hydrogen peroxide according to a specific procedure. Even though the Examiner alleges that a skilled person might recognise that there is a relation between time and the amount of the oxidation reaction, there is absolutely no motivation or trigger by Anders to reduce the time of the oxidation treatment. Anders does not suggest that a shorter reaction time would result in a product having satisfactory properties for the purpose of producing paper or paperboard.

The arguments of the Examiner with respect to the fiber whiteness are not controlling, because the whiteness is only one of many properties of the fiber. A considerable shorter oxidation may not only affect the whiteness, but may have severe impact on further properties of the fiber. Since the skilled person would take into account many other properties than the whiteness of the fiber in view of the purpose (namely paper making), it would not be obvious to just lower the oxidation time. This could lead to a dramatic change of the physical properties of the fiber leading to a fiber which would be unsatisfactory for the preparation of paper or paperboard. Anders does not teach or suggest anything other than an oxidation time of about 24 hours. In view of possible detrimental changes of the fiber, the skilled person would not be motivated to considerably deviate from this oxidation time.

Nishino relates to a hydrogen peroxide bleaching method where a stabilizing agent is used that is free of silicic acid compounds. Nishino mentions that one of the problems of hydrogen peroxide bleaching carried out under alkaline conditions is that the hydrogen peroxide can be rapidly decomposed in the presence of heavy metal ions. In order to prevent this decomposition, a stabilizing agent is added, which is usually a sodium silicate. In the presence of multivalent metal ions, however, the sodium silicate causes deposition of water-insoluble silicate scale (Nishino, column 1, lines 67). As a solution to this problem, Nishino proposes the use of the specific stabilizing agent as defined in claim 1. This shows that Nishino deals with a completely different problem and that the skilled person would have no reason to consult this document starting from Anders.

Although the Examiner argues that the skilled person would be motivated to use the shorter treatment times if Nishino because the decomposition of hydrogen peroxide would allegedly be prevented, this is nonsense. Instead, Nishino teaches to apply the specific stabilization agent as defined in claim 1 to prevent the decomposition of hydrogen peroxide, rather than shorter treatment times. Furthermore, a skilled person would not be motivated by Nishino to shorten the treatment times with reference, specifically to pig's hair, because Nishino is completely silent with respect to pig's hair. Nothing in Nishino would teach the skilled person that a lower treatment time of the process of Anders would still result in a product having the desirable properties for the preparation of paper or paperboard.

In particular, both Anders and Nishino are completely silent as regards the paper or paperboard product of present claim 18, in which cellulose fibers have been mixed with 20 to 30 wt.% of particulate material derived from pig's hair as prepared according to the process defined in that claim.

For this aspect of the present invention, the Examiner refers to Akitaro *et al.* However, Akitaro *et al.* does not relate to fibers derived from pig's hair. As previously argued, the abstract of Akitaro *et al.* merely mentions wool as animal hair. Wool has a completely different structure and completely different physical properties than pig's hair. Pig's hair is much thicker and stiffer than wool. In contrast to the assertions of the Examiner, therefore, it would absolutely not have been obvious to replace the wool used by Akitaro *et al.* with pig's hair.

The newly cited reference of Smook seems to be unrelated, because it specifically reads on wood and wood pulp fibers, rather than animal fibers. Chemically and structurally wood fibers are completely different from animal fibers, which are proteins. The mere disclosure that different types of wood fiber can be used in paper making does not render obvious that particulates derived from wool can be replaced with particulates derived from pig's hair.

Even though in Akitaro *et al.* wool is mentioned as an Example of animal hair, wool is not specifically disclosed. The present application shows a surprising advantage of applying particulates derived from pig's hair according to the specific method of the invention in the preparation of paper, namely the improved stretch at break as evidenced by Figure 5 of the present application. This surprising technical effect is neither suggested by Akitaro *et al.*, nor by Anders or Nishino.

The specific treatment of pig's hair as defined in present claim 1 (and in amended claim 18 and new claim 20) yields a product which is capable of preparing an improved paper or paperboard product. None of the cited prior art teaches or suggests this specific treatment of pig's hair or its use in papermaking. Therefore, it follows that the present invention is non-obvious.

For the above reasons it is respectfully submitted that all pending claims define patentable subject matter. Reconsideration and allowance are solicited. Should the examiner require further information, please contact the undersigned.

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 14-1140.

SLAGHEK ET AL.
Appl. No. 10/589,869
July 7, 2010

Respectfully submitted,
NIXON & VANDERHYE P.C.

by: /Arthur R. Crawford/
Arthur R. Crawford
Reg. No. 25,327

ARC:eaw
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100